REMARKS

Applicant has thoroughly considered the Examiner's remarks, but respectfully disagrees and requests further reconsideration of the application in light of the following remarks. Claims 1, 9, 11 and 19 have been amended by this Amendment B. If the Examiner feels, for any reason, that an interview will expedite prosecution of this application, applicant invites the Examiner to telephone the undersigned attorney. Claims 1-20 are presented in the application for further reconsideration.

Claims 1-20 stand rejected under 35 U.S.C. 102 (b) as being anticipated by U.S. Patent No. 4,930,600 to Kumar et al. (Kumar '600). However, a claim is anticipated only if each and every element as set forth in the claim is disclosed, either expressly or inherently, in a single prior art reference. Verdegal Bros. v. Union Oil. Of California, 814 F.2d 628, 631 (Fed. Cir.1987). Applicant submits that each and every element as set forth in claims 1-20 is not found, either expressly or inherently, in Kumar '600. Thus, the cited reference does not anticipate the claimed invention.

The Office asserts that the system of Kumar '600 undergoes a self test to ensure the operation and communication of the device and that part of the self check includes reading data constants. However, applicant respectfully requests that the Office reads the entire description with regard to the self-test. As described in Kumar '600, "at steps 51 and 52 the lubrication ***system powers up and executes a system self test to ensure proper communication with its sensors, data storage devices and pump systems, among other things***." In other words, this is merely a system initialization process that has nothing do with accessing the health and functionality of an attempted application of friction modifying agent as claimed and described in the present application. As applicant has previously pointed out, there may be proper communication between the components of the system even though a supply of friction modifying agent (e.g., sand) has been depleted, or a sand nozzle or any of the piping is blocked. Thus, even with proper communication between the components of the system, the operator may not be aware of supply and blockage problems until the next physical inspection. The Office further asserts that reading data constants, as disclosed in Kumar '600, implies comparing collected data against constant data (see Office action at page 2). Kumar '600 discloses that after the lubrication system power ups and executes the self test, the system then reads a plurality of the data constants. Thereafter, the lubrication system cycles through six decision parameters, which involves comparing collected data to the read data constants to determine whether to stop lubricant pumps or to adjust lubrication pump rates. (See Kumar '600,

column 7, lines 12-67 and column 8, lines 1-14). In other words, the lubricating system of Kumar '600 determines how much, if any, lubricant to apply to the rails.

In contrast, the present invention not only controls the amount of friction modifying agent (i.e., lubricant) to apply to the rails of a railroad track, but further monitors and assesses the effects of an attempted application of the friction modifying application. (See application, page 7, paragraph 0027). In other words, the present invention determines if the friction modification agent was actually delivered to the wheel-rail interface as intended. According to the present invention, one way to assess the health of a locomotive sanding system is to recognize a change in friction that occurs when sand is introduced to the wheel/rail interface. Fig. 3 illustrates exemplary adhesion versus creep curves, identifying differences in friction or available adhesion for different potential rail conditions. As illustrated, curve 302 depicts the adhesion characteristics of dry sand that provides the highest level of adhesion for each level of per unit creep especially at per unit creep levels of less than 0.2. For per unit of creep levels of less than 0.05, wet sand as depicted by curve 304 provides a higher adhesion than a dry rail as shown by curve 306. For the situations where less adhesion is desirable, as is the case for connected railway cars or a locomotive rounding a curve in a track, oil as depicted by curve 308 provides the least amount of adhesion for per unit creep less than 0.1. Curve 310 illustrates the adhesion characteristics of water that also provides improved reduced friction as compared to a dry rail (curve 306) for per unit creep. (See application, page 5, paragraph 0023). Moreover, as described in the present application, ***current values of the tractive effort 1106 and creep 1108 are compared to the changes in tractive effort and creep in table 1104 where a determination is made regarding the functional effectiveness of the sand system***. As shown in Fig. 10, the ratio changes can be shown as regions in chart 1106 (Similar to previous Fig. 5). Each region can be classified as (a) strong evidence that the sand system is functional 510, (b) weak evidence that the sand system is functional 506, or (c) evidence that the sand system is determined to be non-functional 508. (See application, page 7, paragraph 0026). Thus, by recognizing the relationship between per unit creep and rail adhesion, applicant has developed a system that provides an indication to an operator whether an attempted friction modification application was actually delivered.

To this end, claim 1 recites, in part a system for assessing a health and functionality of a locomotive friction modifying system that includes "a controller associated with the sensor and responsive to input from the sensor for determining a per unit creep of an axle of the locomotive…,

and comparing the determined per unit creep … to an adhesion characteristic indicative of whether the friction modifying agent is being applied to the rail to provide a desired level of adhesion and providing an indication of whether the locomotive friction modifying system is applying friction modifying agent to the rail as a function of the comparison." Claim 11 recites a method for assessing a health and functionality of a locomotive friction modifying system that includes, in part, "determining a per unit creep of an axle of the locomotive," and "comparing the determined per unit creep of the axle…. to an adhesion characteristic indicative of whether the friction modifying agent is being applied to the rail to provide a desired level of adhesion and providing an indication of whether the friction modifying agent was applied to the rail as a function of the comparison." Kumar '600 fails to teach or suggest determining and comparing the determined per unit creep … to an adhesion characteristic indicative of a desired level of adhesion and providing an indication to an operator of the locomotive whether the friction modifying agent is being applied to the rail as a function of the comparison, and, thus, fails to anticipated the claimed invention. Accordingly, Kumar '600 fails to anticipate amended claims 1 and 11.

In view of the foregoing, applicant submits that amended claims 1 and 11 are allowable over the cited art. The remaining dependent claims are believed to be allowable for at least the same reasons as the independent claims from which they depend.

It is felt that a full and complete response has been made to the Office action, and applicant respectfully submits that pending claims 1-20 are allowable over the cited art and that the subject application is now in condition for allowance.

The fact that applicant may not have specifically traversed any particular assertion by the Office should not be construed as indicating applicant's agreement therewith.

Any required fees or overpayments should be applied to Deposit Account No. 07-0846.

Respectfully submitted,

Robert O. Enyard, Jr., Reg. No. 57,780
SENNIGER POWERS
One Metropolitan Square, 16th Floor
St. Louis, Missouri 63102
(314) 231-5400